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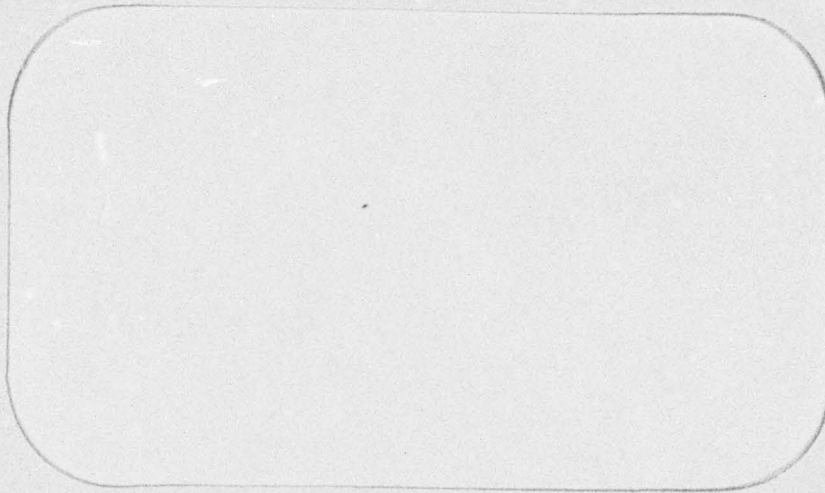
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Staff Paper,

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THE EFFECTS OF THREAT-INDUCED STRESS
ON GROUP PERFORMANCE.

by

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Eugene H./Drucker

⑪

June 1970

⑫

26p.

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ABSTRACT

An experiment was conducted to determine the effects of threat-induced stress on group performance. Task-oriented and relationship-oriented leaders were reprimanded for the performances of their groups on a task requiring creativity. Subsequent performance and group atmosphere scores were compared with those obtained from comparable groups whose leaders were not reprimanded. Threat-induced stress was found not to affect the performance of groups having either task-oriented or relationship-oriented leaders. While stress had no effect on the group atmosphere scores for leaders, those for nonleaders were reduced. These findings failed to confirm predictions derived from Herbst's behavioral model and Fiedler's theory of leadership effectiveness.

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CONTENTS

3	Introduction
3	Purpose
4	Method
4	Subjects
4	Initial Briefings
4	Pretests
5	Formation of the Groups
6	ROTC Evaluation Task
6	Experimental Manipulation of Stress
6	Recruiting Brochure and Dissenter Treatment Tasks
6	Group Atmosphere Scores
7	Debriefing
7	Results
7	Group Performance
7	Group Atmosphere
7	Leaders
7	Nonleaders
9	Discussion
13	Literature Cited and Appendices
15	Literature Cited
17	Appendix A: Group Tasks
17	ROTC Evaluation Task
17	Recruiting Brochure Task
18	Dissenter Treatment Task
19	Appendix B: Group Atmosphere Scale
21	Appendix C: Scoring Categories
21	Categories for Scoring the Recruiting Brochure Task
22	Categories for Scoring the Dissenter Treatment Task

LIST OF TABLES (Page 8)

Table 1, Mean Group Performance Scores for the Four Experimental Conditions

Table 2, Summary of Analysis of Variance of Group Performance Scores

Table 3, Mean Group Atmosphere Scores of Leaders and Nonleaders for the Four Experimental Conditions

Table 4, Summary of Analyses of Variance of Group Atmosphere Scores

THE EFFECTS OF THREAT-INDUCED STRESS ON GROUP PERFORMANCE

INTRODUCTION

The effects of threat-induced stress on performance in a simulated combat decisions game have been investigated by Baker, et al. (1). The purpose of their study was to determine the effects of stress on decision making and risk taking performance of Army career officers and to test predictions made by Herbst (2) concerning the relationship between motivation and performance. According to Herbst, workers who are task involved should show a lower level of performance under stressful conditions than under nonstressful conditions, while workers who are not task involved should show a higher level of performance under stressful conditions. These predictions were confirmed by Baker.

The confirmation of these predictions has serious consequences for the Army. Presumably most career officers are fully involved in the performance of their duties, and their performance would be expected to deteriorate under stress, when the need for high levels of performance is greatest. Therefore, the development of a training program designed to prevent performance deterioration under stress may be necessary. As a preliminary step, however, it is important to establish the generality of the predictions by testing them in a situation different from that used by Baker.

In Baker's study, Army officers were required to monitor, in isolation, a display of lights that supposedly provided target detection information from a radar surveillance center. The men were told that the purpose of the experiment was to help evaluate a new battlefield surveillance system. The officers were required to monitor the display continuously in order to detect momentary interruptions in the lights. The interruptions provided information that would be needed later for deciding whether or not to fire a missile at detected enemy aircraft.

While surveillance is obviously an important military task that requires a high level of performance, it is usually performed by enlisted men rather than officers. When stress was introduced in Baker's study by reprimanding officers for their poor performance (regardless of the actual quality of their work), it was for performance on a task that they ordinarily would not perform. They appeared to be angry, and may have reacted to the situation by thinking that the reprimand was totally unwarranted. It would not be surprising, therefore, that the reprimand led to performance deterioration among men who were initially task involved.

PURPOSE

The purpose of the present study was to determine whether or not performance deterioration occurs under stress when the task is more consistent with the position and training of the subjects, and when only group leaders are reprimanded for the performances of their groups. In the present study, officers were appointed as leaders of groups. Each group was required to write three reports about future Army policy. After

the first report, stress was introduced by reprimanding the leaders for the poor performance of their groups. The effect of these reprimands on group performance was determined by comparing the remaining two reports with those written by groups whose leaders were not reprimanded.

A second purpose of the present study was to determine if leaders with opposing leadership styles differ in their reactions to threat-induced stress. Fiedler (3) has postulated that there are two major styles of leadership: (a) a task-oriented style in which the leader is primarily concerned with the performance of the task; and (b) a relationship-oriented style in which the leader is primarily concerned with achieving good interpersonal relationships within the group. If Herbst's predictions are correct, it would be expected that task-oriented leaders will show performance deterioration under stress, and relationship-oriented leaders will show improvement under stress. To test these predictions, half of the leaders employed had task-oriented styles, and the other half had relationship-oriented styles. The performances of the groups having leaders with opposing leadership styles were compared.

METHOD

Subjects

The participants in the study were 120 Army officers stationed at Fort Knox, Kentucky--41 first lieutenants, 77 second lieutenants, and two warrant officers. Their average length of time in the Army was 18.7 months, and they had an average of 15.5 years of education. Seventy-six of the officers had ROTC experience.

Initial Briefings

Subjects were required to participate in the experiment for two consecutive mornings. On the first morning, they were briefed by the Experimenter and by the Chief of the US Army Armor Human Research Unit (AHRU) on the general nature of the experiment. They were told that the purpose of the experiment was to study how men work together in small groups in order to solve problems requiring creativity. After the Experimenter's briefing, the Chief of AHRU explained the importance of this type of research for the future of the Army, his aim being to increase the subjects' task involvement by emphasizing the importance of their participation in the research.

Pretests

Three pretests were administered to the subjects immediately after the briefing. The first pretest, a measure of leadership style developed by Fiedler, required the men to use a set of bipolar adjectives in describing their least preferred coworkers (LPC). The measure had a format based on the semantic differential (4). The form used in the present study contained 20 bipolar adjective items, the items in each pair being separated

by eight spaces. The following is an example of the bipolar adjectives comprising the LPC measure:

Pleasant	:	8	:	7	:	6	:	5	:	4	:	3	:	2	:	1	:	Unpleasant
Unfriendly	:	1	:	2	:	3	:	4	:	5	:	6	:	7	:	8	:	Friendly
Helpful	:	8	:	7	:	6	:	5	:	4	:	3	:	2	:	1	:	Frustrating

Subjects were required to describe the person with whom they could work least well, either now or in the past, by placing an X in one of the eight spaces between each pair of bipolar adjectives. A value from one to eight was assigned to each response, the most favorable response getting the highest value. The LPC score was obtained by summing the values of the responses made on the 20 pairs of adjectives.

The officers having the highest and lowest scores were selected for leadership positions in the experiment. According to Fiedler, leaders with high scores (high LPC leaders) are relationship-oriented, and those with low scores (low LPC leaders) are task-oriented.

A biographical questionnaire was then administered to determine the background characteristics of the sample, and the McClelland-Atkinson Need Achievement Test (5) was administered to keep the subjects busy while the LPC measures were being scored and the group rosters were being prepared. A secondary purpose of the Need Achievement Test was to provide data on the subjects' needs for achievement in case such information would be helpful in interpreting the results of the study.

Formation of the Groups

The subjects were divided into forty groups, ten in each of four experimental conditions, as follows: (a) Stress - Task-Oriented Leader, (b) Stress - Relationship-Oriented Leader, (c) Nonstress - Task-Oriented Leader, and (d) Nonstress - Relationship-Oriented Leader.

Each group consisted of three members--a leader and two followers. Although leaders were selected on the basis of LPC score and not rank, no officer was assigned to a group whose leader was lower in rank than he. Since the performance of one of the group tasks required knowledge of ROTC, at least one of the members assigned to each group had previous ROTC experience. Except for these restrictions, men were assigned to groups on a random basis.

Task-oriented leaders had mean LPC scores of 49.7 in the stress condition and 41.9 in the nonstress conditions. The scores ranged from 24 to 74 in the stress condition, and from 20 to 65 in the nonstress condition. Relationship-oriented leaders had mean LPC scores of 106.4 in the stress condition and 105.4 in the nonstress condition. The scores ranged

from 89 to 129 in the stress condition, and from 95 to 115 in the nonstress condition.

ROTC Evaluation Task

The teams were then taken to the laboratory and were given the first of the three reports to write, an evaluation of the current ROTC program and suggestions for changes in future programs. A copy of the task is included in Appendix A.

Each group had 1-1/2 hours in which to write the report. The leaders were instructed to write the solutions themselves, but to make certain that the members of the group worked together in solving the problem. The group interactions were tape-recorded, although the recordings were not analyzed. After the report was written, the three members in each group completed the Group Atmosphere Scale (described below), and were dismissed until the following morning.

Experimental Manipulation of Stress

The second morning, all the subjects were taken to the laboratory without being told anything about their performance, except the leaders in the stress condition, who were told that the Chief of AHRU, a lieutenant colonel, wanted to see them in his office. While they stood at attention, he reprimanded them for their poor performance on the ROTC Evaluation Task. He told them that he was disgusted with what they had written, that their performances were poorer than those of any previous participants in the study, and that they were obviously not working at their fullest capacity. He accused them of failing to cooperate in the study, and threatened that if their performances did not improve, he would forward command letters to their senior commanders recommending disciplinary action. He said that he would personally monitor their performances for the rest of the experiment.

The leaders then returned to the laboratory and joined their respective groups.

Recruiting Brochure and Dissenter Treatment Tasks

Each group then completed the two remaining tasks: (a) to write a brochure that the Army could use to recruit college graduates; and (b) to write a report suggesting how the Army could handle dissenters without violating their civil rights. The groups were allowed 1-1/2 hours for each task. Copies of the tasks are included in Appendix A.

Group Atmosphere Score

All subjects were then required to describe the atmosphere of their groups. The Group Atmosphere measure contained 10 pairs of bipolar adjectives, such as pleasant - unpleasant and friendly - unfriendly. Each response was assigned a value (1 through 8). High values were always as-

signed to the more desirable adjective within each pair. A Group Atmosphere score was obtained by summing the values of the responses. Appendix B is a copy of the Group Atmosphere measure.

Debriefing

At the completion of the experiment, its true purpose was explained to the subjects. They were asked not to reveal this to anyone, since data collection would continue for some time.

RESULTS

Group Performance

The Recruiting Brochure and Dissenter Treatment tasks were scored by two independent judges, the Experimenter and an enlisted man who served as an assistant on the project. The reports were scored according to the manual contained in Appendix C. For the Recruiting Brochure task, the categories used in rating the reports were (a) following instructions, (b) interest, (c) creativity, and (d) persuasiveness. For the Dissenter Treatment task, the categories were (a) following instructions, (b) practicality, (c) creativity, (d) persuasiveness, and (e) development of arguments. The rater scored a group by summing the points he gave for all the categories on the two tasks. A final group performance score was obtained by summing the scores given by the two judges. The correlation between the scores given by the two judges was .70, and the range of possible scores was from 0 to 36.

The mean group performance scores for the four experimental conditions are presented in Table 1. As shown, the mean scores were higher for the groups in the stress condition than for the groups in the nonstress condition; but an analysis of variance, summarized in Table 2, showed that neither stress nor leadership style had a significant main effect.

Group Atmosphere

Leaders. The mean Group Atmosphere scores obtained from leaders and nonleaders are presented in Table 3. The range of possible scores was from 8 to 80. As shown, the mean scores for relationship-oriented leaders in the stress condition were lower than the scores for leaders in the other conditions. However, an analysis of variance, summarized in Table 4, showed that neither stress nor leadership style had a significant main effect on the leaders' Group Atmosphere scores, and that the interaction was not significant.

Nonleaders. As shown in Table 3, the Group Atmosphere scores for nonleaders in the nonstress condition were higher than those for nonleaders in the stress condition. The analysis of variance showed that the main effect for stress was significant, but that the effect for leadership style was not.

Table 1

Mean Group Performance Scores for the Four Experimental Conditions

<u>Leadership Style</u>	<u>Stress</u>	<u>Nonstress</u>
Task-Oriented	20.2	16.4
Relationship-Oriented	20.4	17.7

Table 2

Summary of Analysis of Variance of Group Performance Scores

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Stress (A)	1	105.63	2.66
Leadership Style (B)	1	5.63	0.14
A x B	1	3.02	0.08
Error	36	39.74	

Table 3

Mean Group Atmosphere Scores of Leaders and Nonleaders
for the Four Experimental Conditions

<u>Leadership Style</u>	<u>Leaders</u>		<u>Nonleaders</u>	
	<u>Stress</u>	<u>Nonstress</u>	<u>Stress</u>	<u>Nonstress</u>
Task-Oriented	68.1	68.5	65.0	68.2
Relationship-Oriented	60.7	67.0	62.1	67.9

Table 4

Summary of Analyses of Variance of Group Atmosphere Scores

<u>Source</u>	<u>Leaders</u>			<u>Nonleaders</u>		
	<u>df</u>	<u>MS</u>	<u>F</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Stress (A)	1	112.23	1.32	1	792.10	4.34*
Leadership Style (B)	1	198.03	2.33	1	102.40	0.56
A x B	1	87.02	1.02	1	72.00	0.40
Error	36	84.93		36	182.67	

*p < .05

DISCUSSION

The results of the study do not substantiate the findings obtained by Baker on the effects of stress on the performance of task-involved workers. Baker found that stress caused a decrement in performance, and stress was found to have no effect on performance in the present experiment.

The implication of this finding is that threat-induced stress may affect performance only when it is applied directly to a worker. In the present study, stress was applied to the leaders of the groups, but not to the other group members. It may be possible for the leader in this situation to absorb the effects of the stress without allowing it to affect the performance of the other group members.

On the other hand, the differences between these results and Baker's may be due to the difference in the nature of the task. Baker required his subjects to participate in a combat decisions game in which they monitored a series of lights; the subjects in the present study performed a task that corresponded more closely to tasks normally performed by officers. Perhaps the closer correspondence of the present task to the subjects' normal duties led to a greater willingness to perceive the reprimand as being legitimate.

Another possible reason for the discrepancy is that the subjects in the present study may have suspected that the true purpose of the threat was to examine its effects on their performance. This alternative explanation is theoretically possible, but unlikely, for three reasons. In the first place, it was the same type of threat that was used in Baker's study. If the threat had not been believed in the present study, it probably would not have been believed in Baker's study. Second, when the officers returned to the laboratory after the reprimand, they appeared to be deeply concerned about the Chief's reactions. Most of them asked the Experimenter why their performances on the ROTC task were unsatisfactory, and requested specific information about how to avoid further dissatisfaction by the AHRU Chief. Finally, the stress did have an effect on the group atmosphere scores, and this fact suggests that the threat was believed.

It is impossible to state with certainty the exact reason for the discrepancy between Baker's results and those obtained in the present study, which indicate that threat-induced stress does not inevitably result in performance deterioration among task-involved workers.

The finding that leadership style did not interact with stress in influencing group performance is also noteworthy. While Herbst's model and Fiedler's theory lead to opposite predictions concerning the effects of stress on performance, neither prediction was supported. Herbst's model leads to the prediction that task-oriented leaders will show a performance decrement under stress, while relationship-oriented leaders will show a performance increment. A highly task-involved person will perceive

the task as pleasant when stress is low, but unpleasant when stress is high. A person who is not task-involved, however, will derive no satisfaction from the task, and consequently his performance will be low when there is no stress. On the other hand, he will perform at a higher level under stress.

In contrast to these predictions, Fiedler's theory of leadership effectiveness predicts that when stress is high, task-oriented leaders will be more effective than relationship-oriented leaders. Task-oriented leaders will obtain better group performance than relationship-oriented leaders under two vastly different types of situations--very favorable and very unfavorable. In contrast, relationship-oriented leaders will obtain better performance in situations that are intermediate in favorableness. A highly favorable situation for a leader is one in which (a) the relationship between the leader and the other group members is harmonious, (b) the task is highly structured, (c) the leader has a great deal of power, and (d) there is no stress. In this type of situation, the group members expect to be directed. They will therefore perform better under a task-oriented leader than under a more permissive relationship-oriented leader. An unfavorable situation for a leader is one in which (a) the relationship between the leader and other group members is not harmonious, (b) the task is unstructured, (c) the leader has little power, and (d) stress is high. In this type of situation, direction is required in order to motivate the members to perform the task. Thus, a task-oriented leader would be more effective than a relationship-oriented leader. In situations that are intermediate in favorableness, the more permissive relationship-oriented leader would be more effective than the less permissive task-oriented leader.

The stress condition in the present study was an unfavorable leadership situation according to Fiedler's criteria since (a) the reprimand made the group atmosphere less pleasant, (b) the task was unstructured, (c) the leader had little power, and (d) the situation was stressful. The nonstress condition was intermediate in favorableness. Although the task was unstructured and the leader had little power, the situation was harmonious and there was no stress. Thus, Fiedler's theory would predict that task-oriented leaders are more effective than relationship-oriented leaders in the stress situation, but that relationship-oriented leaders are more effective in the nonstress situation.

The results of the present study failed to support either Herbst's model or Fiedler's theory since neither stress nor leadership style was found to have a significant effect on group performance. Furthermore, the interaction between stress and leadership style was not significant, although Fiedler's theory would predict such an interaction.

Two different explanations can be given for the failure to confirm the predictions derived from Herbst's model. The first is that the model may not be an adequate representation of reality. The second is that the experimental situation was beyond the scope of the model. While Herbst's model deals with the performance of individuals under stress, the present

study was concerned with the performance of groups under stress. On the other hand, the experimental situation was well within the scope of Fiedler's theory, and the conclusion that the results do not confirm his theory is a logical one.

The fact that stress did have an effect was indicated by the group atmosphere scores. Although the scores obtained from leaders in the stress and nonstress situations did not differ significantly, a significant difference was obtained in the scores obtained from the other group members. Apparently, the reprimand made the group atmosphere more unpleasant for the nonleaders, but not for the leaders themselves. The most important finding, however, is that there was no effect on the performances of the groups due to stress, even though the group atmosphere was affected.

LITERATURE CITED AND APPENDICES

LITERATURE CITED

1. Baker, R. A.; Ware, J. R.; Spires, G. H.; and Osborn, W. C. "The Effects of Supervisory Threat on Decision Making and Risk Taking in a Simulated Combat Game," Behavioral Science, vol. 11, no. 3 (May 1966), pp. 167-176.
2. Herbst, P. G. "Situation Dynamics and the Theory of Behavior Systems," Behavioral Science, vol. 2, no. 1 (January 1957), pp. 13-29.
3. Fiedler, F. E. A Theory of Leadership Effectiveness, McGraw-Hill, New York, 1967.
4. Osgood, C. E.; Suci, G. J.; and Tannebaum, P. H. The Measurement of Meaning, University of Illinois Press, Urbana, 1957.
5. Atkinson, J. W. (ed.) Motives in Fantasy, Action, and Society, Van Nostrand, Princeton (N. J.), 1958.

APPENDIX A: GROUP TASKS

ROTC EVALUATION TASK

The Army of the future will consist of professional soldiers who have chosen the Army as a career. The draft will be eliminated, and all soldiers (including enlisted men, NCO's, and officers) will be volunteers.

Because the Army will want only men with the abilities and intelligence to handle the complex equipment and operations of tomorrow's Army, a greater proportion of men may be recruited from the high schools and colleges than are currently obtained from these sources. As a result, the high school and college ROTC programs will continue to play a major role in the Army's future. A greater proportion of the men in the Army will have had ROTC experience, and many of the skills required in the military will stem from these programs.

Because the Army of the future may be more dependent upon ROTC programs for training, the requirements for these programs may be quite different from the current programs. ROTC may become increasingly important in helping to prepare men for careers in the Army.

In order to better serve this function, the ROTC programs may need to be changed. Your job today will be to write a report (1) evaluating the current ROTC program in terms of how well it will meet the needs of tomorrow's Army, and (2) suggesting how the future ROTC programs should be organized. What aspects of the current ROTC program will be outdated, and what changes should be introduced?

RECRUITING BROCHURE TASK

As you probably know, the Army's plans for the future call for the elimination of the draft. It is hoped that we can have a professional Army made up of only career men. With the increasing complexity of military equipment and operations, the training period required to develop highly trained soldiers is simply too long and too expensive. By the time today's soldiers develop the necessary skills to be of great value to the Army, they often have too little time left to serve. To solve this problem, the Army hopes to eliminate the draft and to make the Army a profession for soldiers at all levels.

At the same time, the growing complexity of military equipment and operations makes it more important than ever before for the Army to be made up of men with high ability. The Army's plans for the future call for intelligent men with as much college training as possible. Therefore, most of the recruiting in the future will be done in our colleges and universities.

In order to recruit college graduates, the Army will need a recruit-

ing brochure written especially for the college man. The arguments given in the current brochures, such as free housing and medical care, often have little impact upon college graduates since they feel capable of providing for their own needs in civilian life. Your job today is to write a brochure to be used in the future to recruit college graduates. It must appeal to the special needs of these men, and not contain the stale arguments presented in the current recruiting brochures.

DISSENTER TREATMENT TASK

Radical dissenters are becoming an increasing problem for the Army. Although the Army hopes to convert itself to a professional Army in the near future, for the next few years the Army will still be dependent upon draftees. These draftees, however, include an increasing number of dissenters who refuse to obey orders and who refuse to go into combat. While some of these dissenters are Black Muslims who object to being in a "White-man's Army," others are college students, hippies, and leftists who are protesting the role of the Army in today's modern world. While some of these dissenters are only immature and mentally unstable young men, others are well educated and articulate people who are concerned with the future of our country.

Sociological studies have indicated that the number of dissenters will increase in the next few years, and that the Army will be burdened with a greater problem than it can handle. Since many of the dissenters will be natural leaders who are devoted to a cause, the Army realizes that it must take precautionary measures if it is to maintain its efficiency as an effective fighting force. In taking these precautionary measures, care must be taken not to stir up popular opinion against the Army since this, too, can affect its efficiency as a fighting force. What can the Army do to protect itself against dissenters?

Your job is to write a report to the Department of the Army suggesting what the Army should do to eliminate this problem in the future. Remember, however, that the Army can only utilize techniques that do not violate the constitutional rights of the dissenters.

APPENDIX B: GROUP ATMOSPHERE SCALE

NAME _____ DATE _____

Describe the atmosphere of your group by checking the following items.

Pleasant	: <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> :	Unpleasant
	8 7 6 5 4 3 2 1	
Friendly	: <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> :	Unfriendly
	8 7 6 5 4 3 2 1	
Bad	: <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> :	Good
	1 2 3 4 5 6 7 8	
Worthless	: <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> :	Valuable
	1 2 3 4 5 6 7 8	
Close	: <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> :	Distant
	8 7 6 5 4 3 2 1	
Cold	: <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> :	Warm
	1 2 3 4 5 6 7 8	
Quarrelsome	: <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> :	Harmonious
	1 2 3 4 5 6 7 8	
Self-Assured	: <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> :	Hesitant
	8 7 6 5 4 3 2 1	
Efficient	: <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> :	Inefficient
	8 7 6 5 4 3 2 1	
Gloomy	: <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> : <u> </u> :	Cheerful
	1 2 3 4 5 6 7 8	

APPENDIX C: SCORING CATEGORIES

CATEGORIES FOR SCORING THE RECRUITING BROCHURE TASK

A. Following Instructions.

- 2 points - Wrote a real brochure that can almost be used in its present form.
- 1 point - Although it may need extensive editing, an attempt was made to write a brochure. May have been written in outline form.
- 0 points - Did not follow instructions. The solution to the problem is not really a brochure at all. Went off on a tangent.

B. Interest

- 2 points - Very interesting; makes the reader want to keep on reading; is able to grab the reader's attention.
- 1 point - Doesn't grab the reader's attention, but may interest him if he is interested in the problem.
- 0 points - Dull and boring; most readers would not continue to read it.

C. Creativity

- 2 points - Contains many new ideas or attempts an approach that is vastly different from the usual approach; similar to a brochure that could be written by an advertising agency.
- 1 point - May contain one or two original ideas, but not very inventive overall.
- 0 points - Contains no new ideas or approaches.

D. Persuasiveness

- 2 points - Convinces the reader to join the Army.
- 1 point - Gets the reader somewhat interested.
- 0 points - Cannot possibly get the reader interested in joining the Army.

CATEGORIES FOR SCORING THE DISSENTER TREATMENT TASK

A. Following Instructions

- 2 points - Wrote a report that can almost be submitted to DA in its present form.
- 1 point - Although not ready to be submitted to DA, it represented an attempt to write a report; an outline of a report.
- 0 points - Not a report at all; did not follow instructions; made no attempt to offer a solution to the problem.

B. Practicality

- 2 points - Offered solutions that could work; solutions did not violate civil rights; solutions would solve the dissenter problem.
- 1 point - The solution could possibly work, but probably not. Some rights of the dissenter could be violated; solution could be too strong or too mild.
- 0 points - Totally impractical. The solution could not really be used.

C. Creativity

- 2 points - Report contains some solutions that are really new or different; a fresh approach to the problem.
- 1 point - The report may contain one or two unusual ideas, but overall the report is not especially creative.
- 0 points - Contains only ordinary solutions to the problem; shows virtually no insight or imagination.

D. Persuasiveness

- 2 points - Contains strong arguments in favor of the solutions; can convince the reader to follow the suggestions.
- 1 point - Arguments contain some strength, but not a great deal; could only persuade a person already predisposed.
- 0 points - Could not possibly persuade anyone.

E. Development of Arguments

- 2 points - Made a successful attempt to show why the suggested actions would work; problem was carefully thought through.

1 point - Made a rather weak attempt to show why the suggestions would work.

0 points - Made no attempt to show why the suggested actions would work.

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) An experiment was conducted to determine the effects of threat-induced stress on group performance. Task-oriented and relationship-oriented leaders were reprimanded for the performance of their groups on a task requiring creativity. Subsequent performance and group atmosphere scores were com- pared with those obtained from a comparable group whose leaders were not reprimanded.		

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